

# THE PATENT OFFICE OF THE PEOPLE'S REPUBLIC OF CHINA

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Applicant:	KABUSHIKI KAISHA TOSHIBA	Date of Notification: Date: <u>20</u> Month: <u>02</u> Year: <u>2004</u>
Attorney:	WANG YONGGANG	
Application No.:	01145774.0	
Title of the Invention:	半导体装置及びその製造方法	

## Notification of the First Office Action

1. ☒ The applicant requested examination as to substance and examination has been carried out on the above-identified patent application for invention under Article 35(1) of the Patent Law of the People's Republic of China(hereinafter referred to as "the Patent Law").  
☐ The Chinese Patent Office has decided to examine the application on its own initiative under Article 35(2) of the Patent Law.
2. ☒ The applicant claimed priority/priorities based on the application(s):  
filed in JP on Dec. 26, 2000, filed in \_\_\_\_\_ on \_\_\_\_\_,  
filed in JP on Nov, 22, 2001, filed in \_\_\_\_\_ on \_\_\_\_\_,  
filed in \_\_\_\_\_ on \_\_\_\_\_, filed in \_\_\_\_\_ on \_\_\_\_\_,  
☒ The applicant has provided the priority documents certified by the Patent Office where the priority application(s) was/were filed.  
☐ The applicant has not provided the priority documents certified by the Patent Office where the priority application(s) was/were filed and therefore the priority claim(s) is/are deemed not to have been made under Article 30 of the Patent Law.  
☐ The application is a PCT continuation.
3. ☐ The applicant submitted amendments to the application on \_\_\_\_\_ and on \_\_\_\_\_, wherein the amended \_\_\_\_\_ submitted on \_\_\_\_\_ and the amended \_\_\_\_\_ submitted on \_\_\_\_\_ are not acceptable, because said amendments do not comply with ☐ Article 33 of the Patent Law.  
☐ Rule 51 of the Implementing Regulations of the Patent Law.  
The specific reasons why the amendments are not allowable are set forth in the text portion of this Notification.
4. ☒ Examination as to substance was directed to the initial application documents as filed.  
☐ Examination as to substance was directed to the documents as specified below:  
pages \_\_\_\_\_ of the description, claims \_\_\_\_\_ and pages \_\_\_\_\_ of the drawings submitted on \_\_\_\_\_,  
pages \_\_\_\_\_ of the description, claims \_\_\_\_\_ and pages \_\_\_\_\_ of the drawings submitted on \_\_\_\_\_,  
pages \_\_\_\_\_ of the description, claims \_\_\_\_\_ and pages \_\_\_\_\_ of the drawings submitted on \_\_\_\_\_,  
the abstract submitted on \_\_\_\_\_, and the figure for the abstract submitted on \_\_\_\_\_.
5. ☐ This Notification is issued without search reports.  
☒ This Notification is issued with consideration of the search results.  
☒ Below is/are the reference document(s) cited in this Office Action(the reference number(s) will be used throughout the examination procedure):

No.	Number(s) or Title(s) of Reference(s)	Date of Publication (or the filing date of conflicting application)
1	CN1186341A	Date: <u>01</u> Month: <u>07</u> Year: <u>1998</u>
2	CN1188982A	Date: <u>29</u> Month: <u>07</u> Year: <u>1998</u>
3	JP 平 6-268215A	Date: <u>22</u> Month: <u>09</u> Year: <u>1994</u>
4		Date: __ Month: __ Year: __
5		Date: __ Month: __ Year: __

6. Conclusions of the Action:

- ☐ On the Specification:
- ☐ The subject matter contained in the application is not patentable under Article 5 of the Patent Law.
  - ☐ The description does not comply with Article 26 paragraph 3 of the Patent Law.
  - ☐ The draft of the description does not comply with Rule 18 of the Implementing Regulations.
- ☒ On the Claims:
- ☐ Claim(s) \_\_\_\_\_ is/are not patentable under Article 25 of the Patent Law.
  - ☐ Claim(s) \_\_\_\_\_ does/do not comply with the definition of inventions prescribed by Rule 2 paragraph 1 of the Implementing Regulations.
  - ☒ Claim(s) 1,2,7,17,18 does/do not possess the novelty as required by Article 22 paragraph 2 of the Patent Law.
  - ☒ Claim(s) 19,21,25,28,29 does/do not possess the inventiveness as required by Article 22 paragraph 3 of the Patent Law.
  - ☐ Claim(s) \_\_\_\_\_ does/do not possess the practical applicability as required by Article 22 paragraph 4 of the Patent Law.
  - ☐ Claim(s) \_\_\_\_\_ does/do not comply with Article 26 paragraph 4 of the Patent Law.
  - ☐ Claim(s) \_\_\_\_\_ does/do not comply with Article 31 paragraph 1 of the Patent Law.
  - ☒ Claim(s) 4,6,23 does/do not comply with the provisions of Rules 20-23 of the Implementing Regulations.
  - ☐ Claim(s) \_\_\_\_\_ does/do not comply with the provisions of Rule 12 paragraph 1 of the Implementing Regulations.

7. In view of the conclusions set forth above, the Examiner is of the opinion that:

- ☐ The applicant should make amendments as directed in the text portion of the Notification.
- ☒ The applicant should expound in the response reasons why the application is patentable and make amendments to the application where there are deficiencies as pointed out in the text portion of the Notification, otherwise, the application will not be allowed.
- ☐ The application contains no allowable invention, and therefore, if the applicant fails to submit sufficient reasons to prove that the application does have merits, it will be rejected.

8. The followings should be taken into consideration by the applicant in making the response:

- (1) Under Article 37 of the Patent Law, the applicant should respond to the office action within 4 months counting from the date of receipt of the Notification. If, without any justified reason, the time limit is not met, the application shall be deemed to have been withdrawn.
- (2) Any amendments to the application should be in conformity with the provisions of Article 33 of the Patent Law. Substitution pages should be in duplicate and the format of the substitution should be in conformity with the relevant provision contained in "The Examination Guidelines".
- (3) The response to the Notification and/or revision of the application should be mailed to or handed over to the "Reception Division" of the Patent Office, and documents not mailed or handed over to the Reception Divisions have no legal effect.
- (4) Without an appointment, the applicant and/or his agent shall not interview with the Examiner in the Patent Office.

9. This Notification contains a text portion of 3 pages and the following attachments:

- ☒ 3 cited reference(s), totaling 16 pages. ☐

Examination Dept. 3-D Examiner: ZHONG Yi Seal of the Examination Department

## DECISION OF REJECTION IN THE FIRST EXAMINATION

Application No.: 01145774.0

According to the specification, the present application relates to a semiconductor apparatus and a method of fabricating the same. As a result of examination, the following points are set forth.

1. Claim 1 fails to satisfy the requirements under Section 22 (2) of the Patent Law. Reference 1 (refer to page 1, paragraph 5 to page 2, paragraph 2 of the specification of attorney equivalent to CN1186341A "Jpn. Pat. Appln. KOKAI Publication No. 10-189756) discloses a semiconductor apparatus comprising an N-type channel transistor which includes a gate electrode 7N composed of: a P-type well 2A (a first electrical conduction type semiconductor layer) on an P-type silicon substrate (element region); N<sup>+</sup>-type diffusion layers 3A and 3B (second electrical conduction type first diffusion layer) formed at the P-type well portion 2A; a gate insulating film 5; a side wall spacer 6 (a first insulating film mask); and a polycrystalline silicon layer. Accordingly, Reference 1 discloses all of the technical features of claim 1, and can produce a technical idea of obtaining protection of claim 1 and advantageous effect of the same technique pertaining to the same technical field. Therefore, claim 1 does not have novelty.

2. Claims 2, 7, 17, and 18 fail to satisfy the requirements under Section 22 (2) of the Patent Law. Reference 1 (FIGS. 16 and 17A) discloses additional technical features of claims 2, 7, 17, and 18. Therefore, claims 2, 7, 17 and 18 do not have novelty. The term "one side" is unclear, and should be deleted.

(This seems to be a problem with Chinese translation of claim 7, and we will leave it to this amendment.)

3. Claim 4 fails to satisfy the requirements under Section 22 (1) of the sub-rules on implementation of the Patent Law. In the claims, a first direction, a first portion, and a second portion are unclear terms, and it is not clear which direction and which portions are indicated by the direction and the portions. Hence, the scope of obtaining protection of the claims is unclear. In addition, it is not clearly expressed whether the term "vertical" means "vertical in the transverse direction" or "vertical in the longitudinal direction". Thus, the scope of obtaining protection of the claims is unclear. The Applicant should make amendment based on a description of Page 1, the second paragraph from the bottom and Page 7, the fourth paragraph from the bottom of the specification or should express such a term clearly in another expression format.

4. Claim 6 fails to satisfy the requirements under Section 20 (1) of the sub-rules on implementation of the Patent Law. It is not clear whether the term "width" is a transverse width or a longitudinal width, thus obscuring the scope of protection of the claims.

5. Claim 19 fails to satisfy the requirements under Section 22 (3) of the Patent Law. It is common means and publicly known common sense to one having ordinary knowledge in the technical field to employ an SOI substrate (that is, to form a monocrystalline silicon substrate on an insulating layer) in a process of fabricating a semiconductor apparatus. For example, Reference 3 (JP1994258215A) discloses an MIS type semiconductor apparatus having a

silicon oxide layer beneath a semiconductor layer. Therefore, there is no creativity in obtaining a technical idea of claim 19 by combining the above publicly known common sense with Reference 1. Hence, claim 19 fails to have inventive step.

6. Claim 20 fails to satisfy the requirements under Section 22 (3) of the Patent Law. Reference 1 (refer to page 1, paragraph 5 to page 2, paragraph 2 and FIGS. 16 and 17 of the specification of CN1186341A) discloses a semiconductor apparatus fabricating method comprising the steps of: providing a P-type well 2A (a first electrical conduction type semiconductor layer) on a P-type silicon substrate (an element region); and forming an N-type channel transistor which includes a gate electrode 7N composed of: N<sup>+</sup> type diffusion layers 3A and 3B (second electrical conduction type first diffusion layers) formed at the P-type well portion 2A; a gate insulating film 5; a side wall spacer 6 (a first insulating film mask); and a polycrystalline silicon layer. Reference 2 (refer to claims 1 and FIGS. 1 and 2 of attorney equivalent to CN1189982A "Jpn. Pat. Appln. KOKAI Publication No. 10-209443) discloses a semiconductor apparatus fabricating method comprising: depositing an insulating film (a first insulating layer) on the entire surface of a substrate and a gate; and introducing impurities into the gate and the substrate to form source and drain diffusion regions. Therefore, References 1 and 2 disclose all of the technical ideas of claim 20. In addition, References 1 and 2 pertain to the same technical field. It would have been obvious to one having ordinary knowledge in the technical field to obtain the technical idea of obtaining protection of claim 20 by using a combination of References 1 and 2, and further, the combination of these references does not attain unpredictable advantageous effect of

technique. Therefore, since the technical idea of obtaining protection of claim 20 does not have any marked substantial feature or remarkable inventiveness, the present invention does not have inventive step.

7. Claim 21, 25, and 28 fail to satisfy the requirements under Section 22 (3) of the Patent Law. Reference 1 (FIGS. 16 and 17) discloses additional technical features of claims 21 and 25, and thus, claims 21 and 25 fail to have inventive step. Reference 2 discloses additional technical features of claim 28 (for a specific reason, refer to the above opinion of item 6 above), and thus, claim 28 also does not have inventive step. In addition, the expression "one side" is not clear, and should be removed.

8. Claim 23 fails to satisfy the requirements under Section 20 (1) of the sub-rules on implementation of the Patent Law. The terms "a first direction", "a first portion", and "a second portion" are unclear, and it is not clear which direction and which portions are indicated by these direction and portions. Thus, the scope of obtaining protection of the claim is unclear. In addition, it is not clearly expressed as to whether the term "vertical" is "vertical in the transverse direction" or "vertical in the longitudinal direction", thus obscuring the scope of obtaining protection of the claim. The Applicant should make amendment by a description of page 1, the second paragraph from the bottom to page 7, the fourth paragraph from the bottom of the specification or should express such a term clearly in another expression form.

9. Claim 29 fails to satisfy the requirements under Section 22 (3) of the Patent Law. It is common means and publicly known common sense to one having

ordinary knowledge in the technical field to employ an SOI substrate (that is, to form a monocrystalline silicon substrate on an insulating film) in the process of fabricating the semiconductor apparatus. For example, Reference 3 (JP1994268215A) discloses an MIS type semiconductor apparatus having a silicon oxide layer beneath a semiconductor layer. Therefore, there is no creativity in obtaining a technical idea of claim 19 by combining the above publicly known common sense with Reference 1. Hence, claim 29 does not have inventive step.

By virtue of the above stated reasons, the present application is allowable for a patent over the current references. The Applicant should submit sufficient reason(s) why the claims have novelty and inventive step within a specified due date in this Official Action or should overcome defects which exist in the filed documents based on the opinion submitted in this Official Action. The present application will be notified to be final decision of rejection under Section 38 of the Patent Law and Section 36 of the sub-rules on implementation of the Patent Law.

# 中华人民共和国国家知识产权局

邮政编码: 100037

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王永刚

6012977



(无审查业务专用章  
不具备法律效力)

申请号: 01145774.0

部门及通知书类型: 3-D

发文日期:

申请人:

株式会社东芝

发明名称:

半导体器件及其制造方法

## 第一次审查意见通知书

1. ☒ 依申请人提出的实审请求, 根据专利法第 35 条第 1 款的规定, 审查员对上述发明专利申请进行实质审查。

☐ 根据专利法第 35 条第 2 款的规定, 国家知识产权局决定自行对上述发明专利申请进行审查。

2. ☒ 申请人要求以其在:

JP	专利局的申请日	2000 年 12 月 26 日	为优先权日,
JP	专利局的申请日	2001 年 11 月 22 日	为优先权日,
	专利局的申请日		为优先权日,
	专利局的申请日		为优先权日,
	专利局的申请日		为优先权日,

☒ 申请人已经提交了经原申请国受理机关证明的第一次提出的在先申请文件的副本。

☐ 申请人尚未提交经原申请国受理机关证明的第一次提出的在先申请文件的副本, 根据专利法第 30 条的规定视为未提出优先权要求。

3. ☐ 申请人于\_\_\_\_年\_\_月\_\_日和\_\_\_\_年\_\_月\_\_日提交了修改文件。

经审查, 其中: \_\_\_\_年\_\_月\_\_日提交的\_\_\_\_不能被接受; \_\_\_\_年\_\_月\_\_日提交的\_\_\_\_不能被接受;

因为上述修改 ☐ 不符合专利法第 33 条的规定。 ☐ 不符合实施细则第 51 条的规定。

修改不能被接受的具体理由见通知书正文部分。

4. ☒ 审查是针对原始申请文件进行的。

☐ 审查是针对下述申请文件进行的:

说明书 申请日提交的原始申请文件的第\_\_\_\_页;  
\_\_\_\_年\_\_月\_\_日提交的第\_\_\_\_页; \_\_\_\_年\_\_月\_\_日提交的第\_\_\_\_页;  
\_\_\_\_年\_\_月\_\_日提交的第\_\_\_\_页; \_\_\_\_年\_\_月\_\_日提交的第\_\_\_\_页;

权利要求 申请日提交的原始申请文件的第\_\_\_\_页;  
\_\_\_\_年\_\_月\_\_日提交的第\_\_\_\_页; \_\_\_\_年\_\_月\_\_日提交的第\_\_\_\_页;  
\_\_\_\_年\_\_月\_\_日提交的第\_\_\_\_页; \_\_\_\_年\_\_月\_\_日提交的第\_\_\_\_页;

附图 申请日提交的原始申请文件的第\_\_\_\_页;  
\_\_\_\_年\_\_月\_\_日提交的第\_\_\_\_页; \_\_\_\_年\_\_月\_\_日提交的第\_\_\_\_页;  
\_\_\_\_年\_\_月\_\_日提交的第\_\_\_\_页; \_\_\_\_年\_\_月\_\_日提交的第\_\_\_\_页;

说明书摘要 ☐ 申请日提交的; ☐ \_\_\_\_年\_\_月\_\_日提交的;

摘要附图 ☐ 申请日提交的; ☐ \_\_\_\_年\_\_月\_\_日提交的。

回函请寄: 100088  
2201 2001.7

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(注: 凡寄给审查员个人的信函不具有法律效力)



## 第一次审查意见通知书正文

如说明书所述, 本申请涉及一种半导体器件及其制造方法。经审查, 现提出如下审查意见。

1、权利要求 1 不符合专利法第二十二条第二款的规定。对比文件 1 (CN1186341A, 说明书第 1 页第 5 段-第 2 页第 2 段, 附图 16-17) 公开了一种半导体器件, 包括: P 型硅基片 (器件区域) 上的 P 型阱 2A (第 1 导电类型的半导体层), 在 P 型阱 2A 上形成 N 沟道晶体管并包括 N+型扩散层 3A 和 3B (第 2 导电类型的第 1 扩散层), 栅极绝缘膜 5, 边壁间隔 6 (第 1 绝缘掩膜) 及多晶硅制成的栅极 7N, 由此可见对比文件 1 公开了权利要求 1 的全部技术方案, 对比文件 1 与权利要求 1 保护的技术方案属于同一技术领域, 并能产生相同的技术效果, 因此权利要求 1 不具有新颖性。

2、权利要求 2、7、17 和 18 不符合专利法第二十二条第二款的规定。对比文件 1 (附图 16, 17a) 公开了权利要求 2、7、17 和 18 的附加技术特征, 因此权利要求 2、7、17 和 18 不具有新颖性。另外, “一方侧”的措辞不清楚, 应当删除。

3、权利要求 4 不符合专利法实施细则第二十条第一款的规定。第 1 方向、第 1 部分和第 2 部分为不清楚的措辞, 没有描述清楚该方向和该部分分别指的是哪些方向和部分, 造成权利要求的保护范围不清楚; “垂直”的措辞没有描述清楚是横向垂直还是纵向垂直, 造成权利要求的保护范围不清楚, 申请人可以根据说明书第 1 页倒数第 2 段和第 7 页倒数第 4 段进行修改, 或以其它措辞清楚的表达。

4、权利要求 6 不符合专利法实施细则第二十条第一款的规定。“宽度”的措辞没有描述清楚是横向宽度还是纵向宽度, 造成权利要求的保护范围不清楚。

5、权利要求 19 不符合专利法第二十二条第三款的规定。本领域在制作半导体器件的工艺中使用 SOI 衬底 (即在绝缘膜上形成单晶硅衬底) 是常用的手段, 属于公知常识, 例如对比文件 3 (JP1994268215A) 就公开了在 MIS 型的半导体装置, 在半导体层下具有氧化硅层, 因此在对比文件 1 的基础上结合公

上结合公知常识得到权利要求 29 的技术方案是不需要创造性劳动的，权利要求 29 不具有创造性。

基于上述理由，本发明不能被授予专利权。如果申请人不能在规定的期限内陈述权利要求书具有新颖性和创造性的充分理由，并按照本通知书的意见克服申请文本中所存在的缺陷，本申请将依据专利法第三十八条和细则第五十三条被驳回。